

REMARKS

Claims 2 and 6-16 are now pending in the present application.

At the outset, Applicants wish to thank Examiner Keehan for the indication that Claims 2 and 6-10 are free of the art of record and are allowable once the rejection under 35 U.S.C. §112, second paragraph, has been overcome (March 22, 2004 Office Action, page 4, lines 5-8). Reconsideration of the outstanding rejections is respectfully requested in view of the amendment and remarks herein.

The rejection of Claim 1 under 35 U.S.C. §102(b) and under 35 U.S.C. §103(a) over Hoffman et al is obviated by amendment.

Applicants make no statement regarding the propriety of this ground of rejection. Claim 1 has been canceled in order to ensure expedient prosecution and it is requested that cancellation of this claim be without prejudice toward presentation in an ensuing continuation application.

Applicant request acknowledgement that this ground of rejection has been withdrawn.

The rejection of Claims 1, 2, and 6-10 under 35 U.S.C. §112, second paragraph, is respectfully traversed.

The Examiner points to the limitation “a functional group equivalent of 150 to 2,000 g/mol” and has indicated that it is not clear what is meant by this value. Specifically, it is the Examiner’s concern that the exemplary resins of the specification may fall outside this range and, therefore, has caused him some confusion with respect to what units Applicants are using. In the paragraph bridging pages 2 and 3 of the specification, the Examiner walks

through a calculation of the functional group equivalent of Resin F. Based on the Examiner's calculation, he asserts that the final value is 120 g/mol

However, Applicants note that this calculation by the Examiner is incorrect for two fundamental reasons: (a) the Examiner's calculation uses "1g polymer" rather than "0.6g polymer" and (b) the Examiner has overlooked the molecular weight of KOH (MW = 56.1 g/mol).

The Examiner's attention is directed to page 26, lines 9-10 of the present specification which contains the following disclosure:

Properties of Resin F: Mn = 1,711, acid value (*including the solvent*) = 70.1 mgKOH/g, and *solid content = 60 wt%. (emphasis added)*

Accordingly, the acid value used by the Examiner for the calculation of the functional group equivalent includes the solvent.

Nonetheless the functional group equivalent can be calculated by either of the following methods:

(i) The functional group equivalent can be calculated without any influence of the molecular weight of the polybutadiene:

$$56.11 \text{ (MW of KOH)} / (70.1 \text{ (mg KOH/g)} / 1,000 \text{ (mg/g)}) \times (0.6) = 480 \text{ g/mol}$$

In the above calculations, the functional group equivalent falls within the claimed range of 150 to 2,000 g/mol.

(ii) The functional group equivalent can be calculated accounting for the influence of the molecular weight of the polybutadiene:

The carboxyl groups are contained in a mole amount of

$$(70.1\text{mg KOH} / 56.11\text{ g KOH}) / (0.6\text{g/mol of polymer})$$

Therefore, the mole equivalents of carboxyl groups can be calculated by

$$\begin{aligned} & (1,711\text{ g/mol polybutadiene} / 0.6\text{ g/mol of polymer}) \times (70.1 \times 10^{-3} / 56.11) \\ & = 3.56 \end{aligned}$$

Or, converting to terms of gram-equivalents

$$(1,711\text{ g/mol polybutadiene} / 3.56) = 480\text{ g/mol}$$

Therefore in this calculation the functional group equivalent also falls within the claimed range of 150 to 2,000 g/mol.

In view of the foregoing, Applicants submit that the claimed invention is definite within the context of 35 U.S.C. §112, second paragraph. Withdrawal of this ground of rejection is requested.

Applicants submit that the present application is in condition for allowance. Early notification to this effect is respectfully requested.

Respectfully submitted,

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